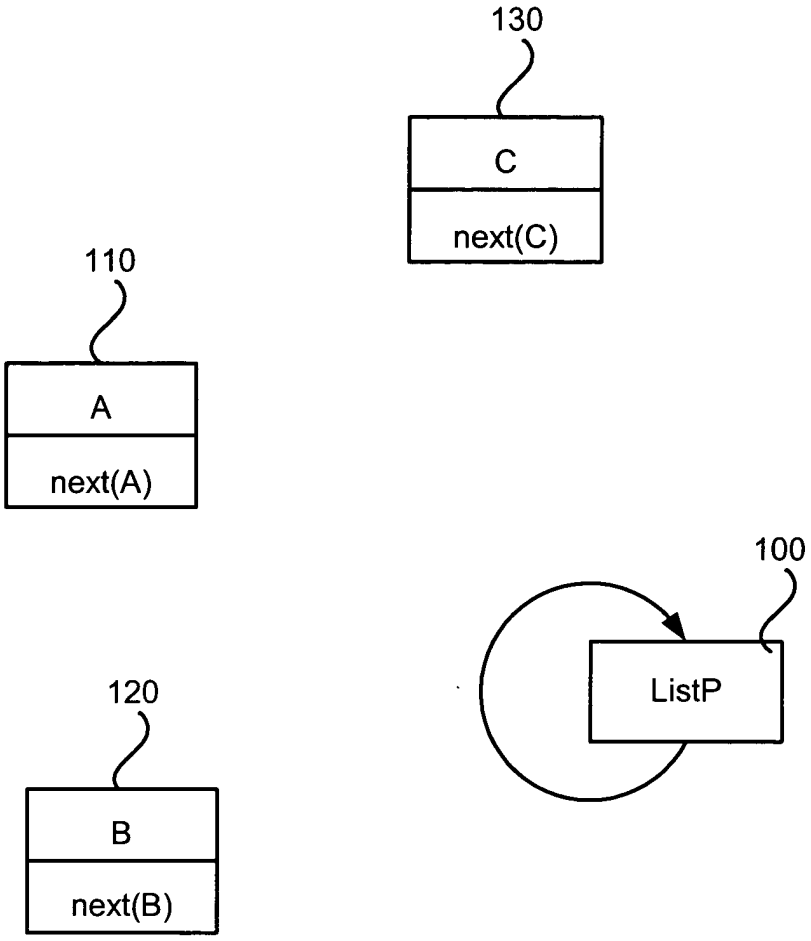

Fig. 1

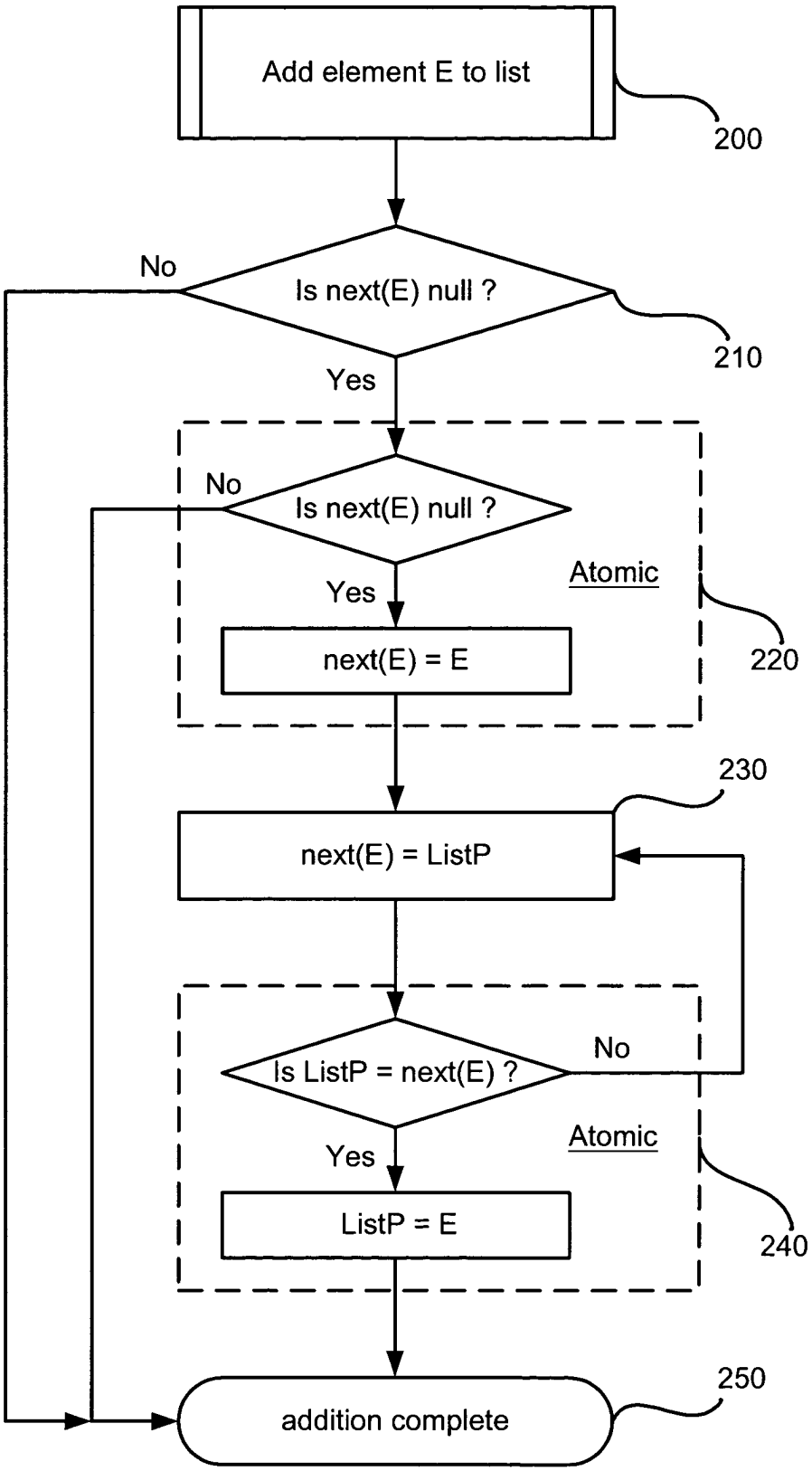
Add element E to list
200
No
Is next(E) null ?
210
Yes
No
Is next(E) null ?
Atomic
Yes
next(E) = E
220
230
next(E) = ListP
Is ListP = next(E) ?
No
Atomic
Yes
ListP = E
240
addition complete
250

Fig. 2

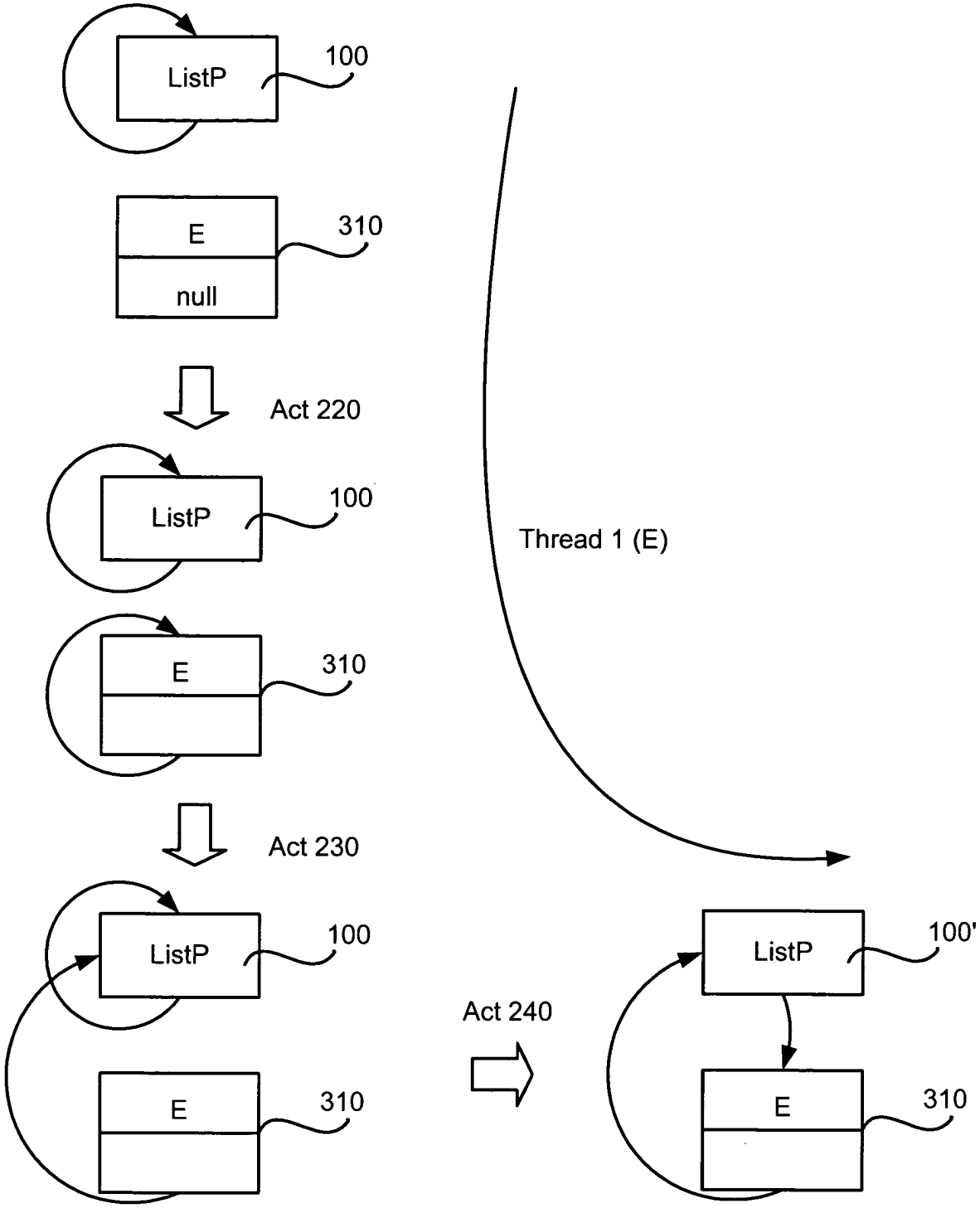
ListP
100
E
null
310
Act 220
ListP
100
E
310
Act 230
ListP
100
E
310
Thread 1 (E)
Act 240
ListP
100'
E
310

Fig. 3

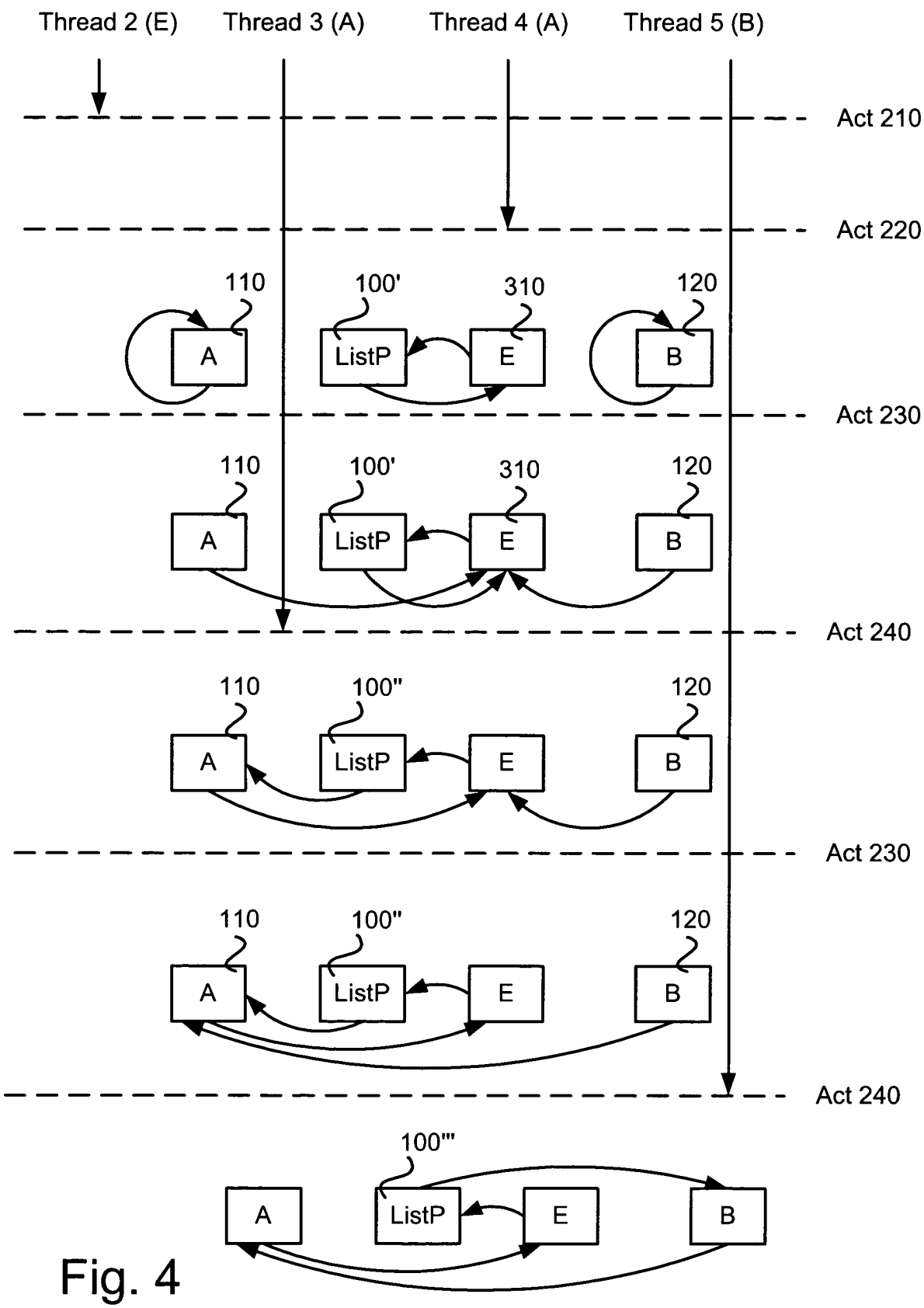
Thread 2 (E)
Thread 3 (A)
Thread 4 (A)
Thread 5 (B)
Act 210
Act 220
Act 230
Act 240
Act 230
Act 240
110
100'
310
120
A
ListP
E
B
100"
100'''

Fig. 4

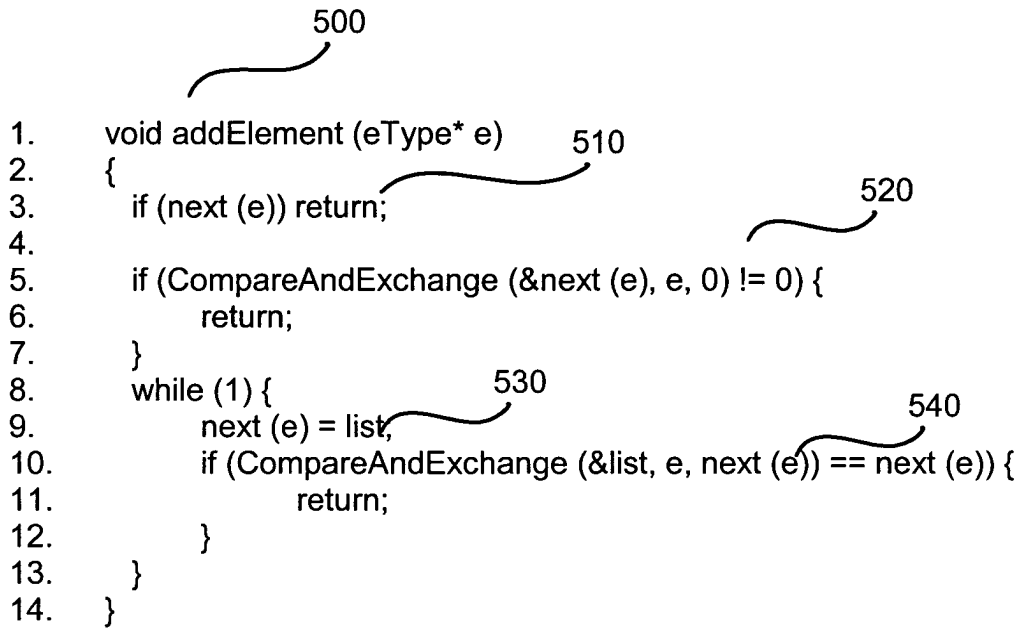
500
1. void addElement (eType* e)
2. {
3. if (next (e)) return;
510
520
4.
5. if (CompareAndExchange (&next (e), e, 0) != 0) {
6. return;
7. }
8. while (1) {
530
9. next (e) = list;
540
10. if (CompareAndExchange (&list, e, next (e)) == next (e)) {
11. return;
12. }
13. }
14. }

Fig. 5